

They procure a Bough of White-thorn, which abounds with Numbers of Thorns; one of which they cut off, and fashion into the Form represented by *A*. TAB. I. *Fig. 2*.

To this they tie a Piece of Thread, as pictured at *B*.

Then they take a Worm, and slip it on the Thorn and Thread together, as is shewn at *C*. The other End of the Thread they fasten to some small Twig that hangs over the Rivulet, as *D*.

Thus they do by some Hundreds at a time; by which means they seldom fail of catching a great many Fishes: For no sooner does a Fish take the Worm into its Mouth, and endeavour to be gone, than its Mouth is gagged quite open, and it is presently drowned.

Jan. 16. 1745-6.

V. *Extracts of Two Letters from the Rev. Henry Miles, D. D. & F. R. S. to Mr. Henry Baker, F. R. S. concerning the Effects of a Cane of black Sealing-wax, and a Cane of Brimstone, in Electrical Experiments.*

I.

Dear Sir,

Read Jan. 23.
1745-6.

BEING determined on making some Experiments in Electricity with other Bodies besides Glafs, a little before the Holidays

D 2

days I procured a Stick of the best black Sealing-wax, of about an Inch in Thickness, and of a convenient Length; and exciting it with white-brown Paper, or clean dry Flanel (I know not which is best) I made the following Trials.

I attempted to kindle common Lamp-Spirits, both by Attraction and Repulsion, the electrified Person standing on a Cake of Bees-wax, and succeeded. --- I made Trial, at the same time, with my glass Tube, and, I think, kindled the Spirits more easily. Perhaps, from some Circumstances hereafter to be mentioned, this may, *ceteris paribus*, be generally expected.

I was then minded to repeat that Experiment of the late ingenious and industrious Dr. *Desaguliers*, and others; by which it appears, that when any light Body is put into a State of Repulsion by vitreous Electricity, it is in a State of Attraction, in respect of resinous Electricity, and so *è contra*. This I found constantly to hold good. — I made this Trial with a Down-Feather, which was tied to the End of a pendulous Thread, which Thread was tied to a silk Line, fastened horizontally to the opposite Sides of the Room, and also with a small Piece of writing Paper, of about the same Dimensions as the Feather. Here I found the Feather would retain the *Effluvia* (whether of the Tube or Cane) about five or six Minutes longer than the Paper would; that is, the Feather remained so much longer in a State of Repulsion. The Time in which the Paper was in a State of Repulsion, after many Trials, I found to be about twenty Minutes, more or less; at about which time the Paper would indeed somewhat sensibly decline

cline the Tube, &c. but in a Moment would be attracted by them; and if I staid longer, I could not perceive any repulsive Force remaining.

I ought to tell you, that when I had, by several Trials, found out about what time the *Effluvia* would be quite dissipated, I forbore making any Trials till then, lest that, by bringing the Tube or Cane near the Body of Trial, I might communicate fresh *Effluvia*, and perpetuate the State of Repulsion longer than it would otherwise have been; so that, in the last Trials I made, I never came near with the Tube, &c. till full twenty Minutes after the Body of Trial was put into a State of Repulsion. I observed not any material Difference of Time between the Dissipation of the *Effluvia* of the glass Tube, and those of the Wax Cane, when the same Body of Trial was made use of for both: If there was any Difference, I think the vitreous *Effluvia* were the most lasting.

I made another Trial with the Cane and Tube in a dark Room; being led to it from a Suspicion I had, that the *Effluvia* from the wax Cane were grosser, and more in Quantity, than those from the glass Tube; and, upon exciting both as quick as I could in Succession, I found the luminous *Effluvia*, when I brought my Forefinger near the Wax, to proceed in a much greater Quantity to the Cane from the Tip of Finger, than they did on the same Trial with the Tube of Glass. And I several times observed a small globular Spot of Fire to appear first on my Finger, from which issued regular Streams in Form of a Comet's Tail.

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When I made use of the glass Tube, as the Quantity was less, so the Sparks were finer, less in Thickness and in Length, but much more active; nor did they proceed so regularly towards the Tube, nor make so regular an Appearance (being seldom, if ever, altogether regular, as the others); frequently breaking in Pieces, as if by Collision, or not altogether unlike the Sparks from a Brand in a Wood Fire, which has lain long without being stirred. Another Difference I remarked was, that the resinous *Effluvia* were more deeply coloured than the vitreous.

Q. Whether it be not probable, that the resinous *Effluvia* are more unctuous or sulphureous than the vitreous; and because not so active and nitrous, less apt to kindle inflammable Spirits, as I think I found them to be?

I intreat I may not be considered as pretending, in the above Trials, to establish Laws, but, as plainly relating Matters of Fact. Perhaps future Trials may not confirm these.

I think it not a Circumstance too impertinent to be mention'd, that the Trials relating to Repulsion were made in a small Room, and near a Fire; the Air pretty moist.

Dear Sir,

Testing, Jan. 15.

1745-6.

Your most affectionate Friend,

and obliged Servant,

H. Miles.

II.

*Extract of another Letter from Dr. Miles.**Tooting, Jan. 22. 1745-6.*

I AM dubious whether I did not express myself in a Manner liable to be misunderstood, when I said to this Purpose, *That I would not be understood to establish Laws by the fore-mentioned Experiments, but only to relate Facts; and that future Experiments might not confirm these.* I did not intend this should extend to that Experiment, which proves the different Nature of vitreous and resinous *Effluvia*; which, I presume, may be consider'd as invariable inherent Properties; so that Bodies, put into a State of Repulsion by the one, will be attracted by the other, &c. But the other *Phænomena*, as depending on changeable Circumstances, the Temperature of the Air, the Degree in which the electric Bodies may chance to be excited, the Quantity of *Effluvia*, and perhaps others to us unknown; the other *Phænomena* (I say), depending on such-like Circumstances, may be variable.

I beg Leave to inform you, that I have been making Trial with a Stick of Sulphur of the common Sort, which I made of a convenient Size, by casting it into a Coffin of Paper, the Inside being of writing Paper: This, being excited, attracted the Bunch of Threads with great Power, and kindled common Spirits as quick as ever I knew it done. This was after Night, and I saw not what the Daylight afterwards discover'd, that the inside Round of Paper adher'd

her'd to the Sulphur, and it had made its Way thro the Paper, which conceal'd the Colour of the Paper, and its Adherence, till next Day; however it perform'd as above. — This was broke, by an Attempt to strip the Paper off the Stick by a too officious Person, without my Knowledge. — I then cast another with the same Sulphur, and an Addition of fresh, melted together in a wood Mould, which came out smooth and well; but was persuaded, against my own Judgment, to put a Gun-Rammer into the middle of the Mould, to strengthen it; which Stick answer'd that End; but, as I fear'd it would turn out, the Sulphur, tho' of a great Thickness round the said Gun-stick, could by no means be excited to any tolerable Degree. I therefore made a third, as the first, which has the Paper on it as before, but it performs exceeding well: Having suffer'd myself to be electrified with it, upon the Approach of a Person's Finger to mine, I had by far the most painful Sensation I ever yet felt in any of these Experiments. — I believe a glass Tube might be best of all for a Mould (but mine are of too small a Bore), if one could be assured it would not break.